CASE REPORT

A rare case of an ectopic pregnancy in the rudimentary tube of a patient with an isolated unicornuate uterus

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SUMMARY

Uterine anomalies are relatively uncommon and go undiagnosed in many cases. Ectopic pregnancies have been reported in such patients, although rarely, in the non-communicating rudimentary horns of unicornuate uteri. However, the case presented is of an ectopic pregnancy in the rudimentary fallopian tube related to an undescended ovary in a patient with an isolated unicornuate uterus, a phenomenon which is extremely rare.

BACKGROUND

The incidence of Müllerian duct anomalies is reported to be 3.2% in women with normal reproductive outcomes. Of these anomalies, the unicornuate uterus constitutes approximately 20%, with some studies quoting an overall incidence of 0.3%.¹ Most patients remain asymptomatic until menarche or until they become pregnant.²

CASE PRESENTATION

A 32-year-old Caucasian woman presented to Accident and Emergency at approximately 8 weeks of gestation, with two episodes of collapse and severe abdominal pain. She had no vaginal bleeding or any significant medical or surgical history. She had one previous miscarriage 4 months prior to her presentation, which was managed conservatively.

On examination, she had pain in the right iliac fossa with guarding and a postural drop in her blood pressure. A bedside transabdominal scan showed free fluid in the abdomen. A ruptured ectopic pregnancy was suspected given the clinical history and examination findings and she was taken to theatre for an emergency laparoscopy.

Laparoscopy showed the presence of a haemoperitoneum of 1 L with a unicornuate uterus on the right side with a normal right tube and ovary. No rudimentary horn was seen (figure 1). The left tube and ovary were not visible in the pelvis. A careful inspection revealed that the left ovary was located above the pelvis with a rudimentary fimbrial end adherent to the ovary. The ectopic pregnancy appeared to be located within this fimbrial stump on the surface of the ovary and was subsequently removed, conserving the ovary (figure 2).

OUTCOME AND FOLLOW-UP

Histology sections showed a fallopian tube with chorionic villi within the wall. These features were consistent with a fallopian tube with associated ectopic pregnancy. She was discharged and had a subsequent ultrasound scan which confirmed a unicornuate uterus with a normal right ovary but the left ovary could not be visualised in the pelvis. There was no evidence of a rudimentary horn. As these uterine malformations are associated with renal abnormalities, such as an ectopic kidney, an ultrasound of the renal tract was also conducted. This showed normal kidneys bilaterally, with normal shape, size and echo-pattern appearances.³

Following this surgery, the patient went on to conceive spontaneously and subsequently had a planned caesarean section at 39 weeks of gestation for a malpresentation.

DISCUSSION

The female reproductive organs develop at approximately 6 weeks of gestation from the paired Müllerian (paramesonephric) ducts. They fuse to create the uterus, cervix and upper two-thirds of the vagina. Failure of fusion or normal development or incomplete medial wall resorption of the Müllerian ducts, results in a variety of congenital uterine anomalies.

The unicornuate uterus is a result of abnormal or failed development of one of the paired Müllerian ducts. The unicornuate uterus can be further subdivided into four variants.⁴ The isolated unicornuate uterus (with no rudimentary horn) is the most common, with a reported frequency of 35%. When a rudimentary horn is present, it is non-cavitary in 33% of cases, cavitary non-communicating in 22% and cavitary communicating in 10%. During the third month of fetal life, the developing ovaries descend from a position near the kidneys to their final position in the pelvis. Ovarian maldescent rarely occurs in patients with a normal uterus. However, the incidence is reported to be more than 40% in cases of unicornuate uterus.⁵

While uterine anomalies are the most frequent of the Müllerian duct abnormalities, occurring in 2% to 4% of fertile women, structural abnormalities of the fallopian tubes and ovaries are exceedingly rare.⁶ While studies have reported rudimentary horn pregnancies, as well as tubal and cornual ectopic pregnancies occurring in both communicating and non-communicating horns,⁷ there is

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Figure 1 Unicornuate uterus with the right tube and ovary. No left tube or ovary visible.

little published literature about ectopic pregnancies in the undescended ovary or tube in patients with an isolated unicornuate uterus. These ectopic pregnancies are associated with severe maternal morbidity and even mortality.⁸ Cases of undescended ovaries have been reported as incidental findings when investigations for infertility have been carried out.⁸ These reports identify the undescended ovary via MRI following discrepancies in fertility blood tests. Such reports identify the ovary situated above the pelvic brim, the upper portion of the pelvis and retroperitoneal areas.

The occurrence of an ectopic pregnancy above the pelvis in the absence of a functional hemi-uterus or a tube on the affected side raises questions about the mechanism of fertilisation. As the ectopic was found in the fimbrial stump associated with an undescended left ovary, it is likely that the sperm travelled through the unicornuate uterus, the right tube, across the intraperitoneal cavity to the ovum produced by the unconnected left ovary where fertilisation occurred. As non-communicating rudimentary horn pregnancies are thought to result from transperitoneal migration of sperm, it can be assumed that this is the route of fertilisation in the case described. One study showed that transperitoneal migration of sperm occurred

in 50% of all pregnancies, showing the importance of removing non-communicating rudimentary horns.⁹

It is also likely that the undescended ovary is able to ovulate. Cases have described normal intrauterine pregnancies in patients with a unicornuate uterus undergoing intrauterine insemination for infertility. One such case reported the presence of an identified undescended ovary on the left side containing several follicles following clomiphene citrate stimulation. The patient still became pregnant, likely from the transperitoneal migration of the ovum produced on the left undescended ovary.¹⁰

Our report is rare, as this finding was noted while managing an ectopic pregnancy. While rare cases of ectopic pregnancies have been seen in cases of non-communicating rudimentary horns of unicornuate uteri,¹¹ searches have found little evidence of a case like the one reported here, hence the importance of such a report. Given the evidence above, as most unicornuate uteri are found incidentally, these women need to be investigated further for undescended ovaries or tubes, to avoid the risk of ectopic pregnancies occurring in these misplaced organs.

Learning points

- Uterine malformations need to be considered in women with fertility problems or recurrent miscarriages and is usually an incidental finding.
- When a unicornuate uterus is identified, further investigations to diagnose and remove undescended ovaries or tubes need to be considered.
- This will avoid the risk of ectopic pregnancies in misplaced organs, and the morbidity and mortality associated with it.

Contributors SG: planned the case report and wrote the article in full; researched the different aspects of the case and analysed the research and data found to support the article. DU: initial involvement in the case and idea behind writing it as a case report; edited and contributed to the final written piece.

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Figure 2 Left ovary and the fimbrial end of the tube located outside of the pelvis with ectopic pregnancy in the tube with a blood clot.

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